Course Web Site: WebCT (http://courses.uiowa.edu/index.html)

Instructor: Prof. Alexei V. Tivanski; office: E272 CB; 384-3692; alexei-tivanski@uiowa.edu

Office Hours: MW 10:00-11:30 AM, E272 CB; other times available by appointment only.

Discussion Sessions TA: Suman Ghorai, office hours: M 3:30-5:30 PM, Rm. E244

Lectures: MWF, 8:30-9:20 AM, Rm. W268 CB

Textbook Materials: Physical Chemistry 8th Ed. by P. A. Atkins and J. de Paula; Student Solutions Manual for the textbook

Objectives: Physical chemistry is the study of the interaction of energy and matter. This course covers kinetic theory of gases, intermolecular forces, thermodynamics, and electrochemistry. The course is intended primarily for chemistry, biochemistry, environmental science, and chemical and biochemical engineering majors.

Discussion Sessions: You should be registered for a discussion session. A teaching assistant will conduct discussion sessions at the times listed below. This provides a good opportunity to have questions answered, to work assigned problems, and to have concepts explained from a different perspective.

004:131:001: Tue 4:30-5:20 PM, Rm. E203 CB
004:131:002: Wed 3:30-4:20 PM, Rm. E264 CB

Exams: There will be three exams of equal weight (100 points each) and a comprehensive final (200 points). The times and dates of the exams are listed below. Note that the time limit for taking each exam and the final is 2.0 hours. Make-up exams will be given only for excused absences or documented medical reasons. Please contact the instructor before the missed exam.

Exam I February 16, 5:30-7:30 PM, Rm. 125 TH
Exam II March 30, 5:30-7:30 PM, Rm. 125 TH
Exam III April 27, 5:30-7:30 PM, Rm. 125 TH
Final May 13, 12:00-2:00 PM, Rm. TBA

Homework: Three graded homework assignments (50 points each) will be given during the course of the semester. Homework may be discussed, but all written work must be performed independently.

Grading System: The +/- grading scale will be used. The homework, exams, and final exam will be weighted in the following manner:

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
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<tbody>
<tr>
<td>3 homework assignments at 50 points each</td>
<td>150 points (23%)</td>
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<tr>
<td>3 two-hour exams at 100 points each</td>
<td>300 points (46%)</td>
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<tr>
<td>Final exam</td>
<td>200 points (31%)</td>
</tr>
<tr>
<td>Total</td>
<td>650 points (100%)</td>
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The distribution of grades will be similar to that of previous years, i.e., about 20% A, 35% B, 35% C and 10% D grades with approximately equal numbers of plus, minus and straight grades within each range.
Department of Chemistry Contact Information: Main Office: E331 CB; Phone: 335-1350; Department Executive Officer: David Wiemer

Use of Calculators: You will be permitted to use "simple" scientific calculators on exams. Palm-size, laptop, or other portable computing devices are not permitted during exams.

Course Contents: We will cover much of the material in the textbook not covered in 004:132. Problem solving is an important component of the learning process. Accordingly, you are expected to work (at a minimum) the problems that will be assigned from each chapter. These assigned problems will be graded and returned to you. The problems are representative of the type you will find on exams. The chapter coverage follows:

*Ideal and Real Gasses*
- Ch 1 The properties of gasses
- Ch 21 Molecules in motion: molecular motion in gasses
- Ch 18 Molecular interactions: interactions between molecules

*The Laws of Thermodynamics*
- Ch 2 The First Law
- Ch 3 The Second Law

*Pure Substances, Mixtures, and Equilibrium*
- Ch 4 Physical transformations of pure substances
- Ch 5 Simple mixtures
- Ch 6 Phase diagrams
- Ch 7 Chemical equilibrium

*Surface adsorption and electrochemistry*
- Ch 25 Processes at solid surfaces

For each semester hour credit in the course, students should expect to spend at least two hours per week preparing for class sessions (averaged over the entire semester).

Policies:

1. Academic Fraud
All forms of plagiarism and any other activities that result in a student presenting work that is not his or her own are academic fraud. All academic fraud is reported first to the departmental DEO and then to the Associate Dean for Academic Programs and Services. See Academic Fraud at [http://www.clas.uiowa.edu/students/academic_handbook/ix.shtml](http://www.clas.uiowa.edu/students/academic_handbook/ix.shtml) for the complete policy.

2. Accommodations for Disabilities
Under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, instructors must provide reasonable academic accommodations for qualified students with disabilities. Students seeking academic accommodations first register with Student Disability Services and meet with a counselor in that office who reviews documentation and determines eligibility for services. Visit Student Disability Services at [http://www.uiowa.edu/~sds/](http://www.uiowa.edu/~sds/). I need to hear from anyone who has a disability, which may require some modification of seating, testing or other class requirements so that appropriate arrangements may be made. Please contact me during my office hours.
3. Making a Suggestion or a Complaint

Students have the right to make suggestions or complaints and should first visit with the instructor, then with the course supervisor if necessary and next with the departmental DEO. All complaints must be made as soon as possible. For more information visit, Student Complaints at http://www.clas.uiowa.edu/students/academic_handbook/ix.shtml#5.

4. Understanding Sexual Harassment

Sexual harassment is reprehensible and will not be tolerated by the University. It subverts the mission of the University and threatens the well-being of students, faculty, and staff. Visit http://www.sexualharassment.uiowa.edu for definitions, assistance, and the full University policy.

5. Reacting Safely to Severe Weather

In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. (Operations Manual, IV.16.14. Scroll down to e. h. and i.)

6. Resources for Students

Writing Center 110 EPB, 335-0188, www.uiowa.edu/~writingc
Speaking Center 12 EPB, 335-0205, www.uiowa.edu/~rhetoric/centers/speaking
Mathematics Tutorial Laboratory 314 MLH, 335-0810, www.uiowa.edu/mathlab
Tutor Referral Service Campus Information Center, IMU, 335-3055, www.imu.uiowa.edu/cic/tutor_referral_service